Carotido-Brachial Bypass for Revascularization of the Upper Extremity

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Objective:

Carotido-brachial bypass is rarely performed. Initially reported by E. Garrett (Arch Surg 91, 751-757, 1965), the procedure is published occasionally as case report. 30 procedures have been identified. We report our own experience with this procedure from 8/03-5/24.

Methods:

Prospective data collection in a dedicated database (n=252, 46 variables), retrospective analysis. Procedures have been performed at academic teaching hospitals.

Results:

14 procedures in 12 patients (50% male). Median age: 50.3 years (27.2-77.9), Indication: Chronic ischemia: 8 (Takayasu s arteritis: 3; occlusion due to thoracic outlet syndrome: 3; actinic arteriitis: 2), vascular trauma: 4 (iatrogenic: 2), miscellaneous: 2 (failed thrombectomy: 1, subclavian aneurysm: 1). Proximal anastomosis: common carotid artery (anastomotic length: 1.2cm, median duration of carotid cross-clamp: 8 minutes). Distal anastomosis: axillary artery: 6, brachial artery: 5, cubital artery: 2, ulnar artery 1. Graft material: Greater saphenous vein: 13 (non reversed: 69.2%), 1 ePTFE. 7 procedures were redo procedures after failed revascularization (50% 5 open, 2 endovascular). The bypass course was subcutaneous, crossing the collarbone in the lateral third. During follow up (median 5.3 years) two occlusions have been observed, treated with redo bypass (vein: 1, ePTFE: 1) 2 patients died during follow up (both: malignant disease).

Conclusion:

We report a large series of carotid-brachial bypass. Indication are mainly occlusive pathologies due to rare medical conditions or trauma to the shoulder girdle. 50% of carotido-brachial bypass procedures in literature have been reported with artificial grafts. In our series 92.3% were performed with vein. This could be due to the fact that 50% of our procedures were redo procedures after failed revascularization, often with artificial grafts. No neurological complications have been observed using the common carotid artery as inflow vessel. Long term results are excellent, which is of consideration as these patients are younger as typical patients undergoing vascular surgery.